

**Abstract**

A method of enriching mesenchymal precursor cells including the step of enriching for cells based on at least two markers. The markers may be either i) the presence of markers specific for mesenchymal precursor cells, ii) the absence of markers specific for differentiated mesenchymal cells, or iii) expression levels of markers specific for mesenchymal precursor cells. The method may include a first solid phase sorting step utilizing MACS recognizing expression of the antigen to the STRO-1 Mab, followed by a second sorting step utilizing two color FACS to screen for the presence of high level STRO-1 antigen expression as well as the expression of VCAM-1.